



#6

## SEQUENCE LISTING

<110> ~~Sleeman, Lorna~~  
Sleeman, Matthew  
Abernethy, Nevin  
Onrust, Rene  
Kumble, Anand  
Murison, Greg

<120> Compositions Isolated From Stromal Cells  
and Methods For Their Use

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<170> FastSEQ for Windows Version 4.0

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$\langle 211 \rangle$  1435

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 $\langle 220 \rangle$ 

<221> misc feature

 $\langle 222 \rangle \quad (1) \dots (1435)$ 

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 115 120 125  
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 Leu Pro Ser Cys Leu Thr Leu Leu Val Ala Cys Thr Val Val Phe Leu  
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 Thr Phe Lys Lys Pro Leu Leu Gln Val Ile Lys Ser Arg Cys His Trp  
 180 185 190  
 Ser Ser Ile Tyr  
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<210> 12  
 <211> 174  
 <212> PRT  
 <213> Mouse

<400> 12  
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 Pro Arg Val Gly Cys Ser Glu Tyr Thr Asn Arg Ser Cys Glu Glu Cys  
 35 40 45  
 Leu Arg Asn Val Ser Cys Leu Trp Cys Asn Glu Asn Lys Ala Cys Met  
 50 55 60  
 Asp Tyr Pro Val Arg Lys Ile Leu Pro Pro Ala Ser Leu Cys Lys Leu  
 65 70 75 80  
 Ser Ser Ala Arg Trp Gly Val Cys Trp Val Asn Phe Glu Ala Leu Ile  
 85 90 95  
 Ile Thr Met Ser Val Leu Gly Gly Ser Val Leu Leu Gly Ile Thr Val  
 100 105 110  
 Cys Cys Cys Tyr Cys Cys Arg Arg Lys Lys Ser Arg Lys Pro Asp Lys  
 115 120 125  
 Ser Asp Glu Arg Ala Met Arg Glu Gln Glu Glu Arg Arg Val Arg Gln  
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 Lys Tyr Gly Leu Phe Lys Glu Gln Asn Pro Tyr Glu Lys Phe  
 165 170

<210> 13

<211> 106  
 <212> PRT  
 <213> Mouse

<400> 13

Ala	Pro	Gly	Lys	Pro	Cys	Arg	Gly	Leu	Ser	His	Arg	Thr	Cys	Ile	Leu
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Arg	Cys	Arg	Pro	Met	Pro	Leu	Phe	Thr	His	Pro	Ser	Pro	Cys	His	Leu
			20					25					30		
Cys	Gly	Pro	Cys	Ser	Thr	Thr	Ser	Pro	Ser	Thr	Trp	Val	Leu	Cys	Pro
		35					40					45			
Leu	Pro	Met	Ser	Pro	Leu	Cys	Pro	Thr	Cys	Val	Ser	Thr	Met	Thr	Leu
		50				55					60				
Ala	Thr	Cys	Thr	Cys	Pro	Trp	Ser	Thr	Thr	Cys	Pro	Cys	Thr	Leu	Ala
65					70					75					80
Pro	Asn	His	Gly	Ile	Ala	Ser	Asp	Thr	Gln	Ser	Pro	Val	Ser	Arg	Ala
			85						90					95	
Glu	Ser	Val	Gly	Gly	Pro	Ser	Leu	Ile	Phe						
			100					105							

<210> 14  
 <211> 268  
 <212> PRT  
 <213> Mouse

<400> 14

Met	Ala	Leu	Gly	Phe	Ser	Gln	Arg	Ser	Arg	Met	Val	Ala	Ala	Gly	Ala
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Gly	Val	Thr	Arg	Leu	Leu	Val	Leu	Leu	Met	Val	Ala	Ala	Ala	Pro	
			20					25				30			
Ser	Arg	Ala	Arg	Gly	Ser	Gly	Cys	Arg	Val	Gly	Ala	Ser	Ala	Arg	Gly
		35					40					45			
Thr	Gly	Ala	Asp	Gly	Arg	Glu	Ala	Glu	Gly	Cys	Gly	Thr	Val	Ala	Leu
		50				55					60				
Leu	Leu	Glu	His	Ser	Phe	Glu	Leu	Gly	Asp	Gly	Ala	Asn	Phe	Gln	Lys
65					70					75					80
Arg	Gly	Leu	Leu	Leu	Trp	Asn	Gln	Gln	Asp	Gly	Thr	Leu	Ser	Ala	Thr
			85						90					95	
Gln	Arg	Gln	Leu	Ser	Glu	Glu	Glu	Arg	Gly	Arg	Leu	Arg	Asp	Val	Ala
			100					105					110		
Ala	Val	Asn	Gly	Leu	Tyr	Arg	Val	Arg	Val	Pro	Arg	Arg	Pro	Gly	Thr
		115				120						125			
Leu	Asp	Gly	Ser	Glu	Ala	Gly	Gly	His	Val	Ser	Ser	Phe	Val	Pro	Ala
		130				135					140				
Cys	Ser	Leu	Val	Glu	Ser	His	Leu	Ser	Asp	Gln	Leu	Thr	Leu	His	Val
145					150					155					160
Asp	Val	Ala	Gly	Asn	Val	Val	Gly	Leu	Ser	Val	Val	Val	Tyr	Pro	Gly
			165						170					175	
Gly	Cys	Arg	Gly	Ser	Glu	Val	Glu	Asp	Glu	Asp	Leu	Glu	Leu	Phe	Asn
			180					185					190		
Thr	Ser	Val	Gln	Leu	Arg	Pro	Pro	Ser	Thr	Ala	Pro	Gly	Pro	Glu	Thr
		195				200						205			
Ala	Ala	Phe	Ile	Glu	Arg	Leu	Glu	Met	Glu	Gln	Ala	Gln	Lys	Ala	Lys
		210				215					220				
Asn	Pro	Gln	Glu	Gln	Lys	Ser	Phe	Phe	Ala	Lys	Tyr	Trp	Met	Tyr	Ile
225					230					235					240
Ile	Pro	Val	Val	Leu	Phe	Leu	Met	Met	Ser	Gly	Ala	Pro	Asp	Ala	Gly

Gly Gln Gly Gly Gly Gly Gly Gly Gly Gly Ser Ser Arg  
 245 250 255  
 260 265

<210> 15  
 <211> 66  
 <212> PRT  
 <213> Mouse

<400> 15  
 Met Asp Phe Leu Val Leu Phe Leu Phe Tyr Leu Ala Phe Leu Leu Ile  
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 Cys Val Val Leu Ile Cys Ile Phe Thr Lys Ser Gln Arg Leu Lys Ala  
 20 25 30  
 Val Val Leu Gly Gly Ala Gln Val Ala Leu Val Leu Gly Tyr Cys Pro  
 35 40 45  
 Asp Val Asn Thr Val Leu Gly Ala Ser Leu Glu Gly Ser Gln Asp Lys  
 50 55 60  
 Gly Met  
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<210> 16  
 <211> 338  
 <212> PRT  
 <213> Mouse

<400> 16  
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 Ala Leu Ile Leu Trp Leu Leu Arg Gly Asp Ser Gly Ala Pro Gly Lys  
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 Asp Gly Val Ala Glu Pro Pro Gln Lys Gly Ala Pro Pro Gly Glu Ala  
 35 40 45  
 Ala Ala Pro Gly Asp Gly Pro Gly Gly Gly Gly Ser Gly Gly Leu Ser  
 50 55 60  
 Pro Glu Pro Ser Asp Arg Glu Leu Val Ser Lys Ala Glu His Leu Arg  
 65 70 75 80  
 Glu Ser Asn Gly His Leu Ile Ser Glu Ser Lys Asp Leu Gly Asn Leu  
 85 90 95  
 Pro Glu Ala Gln Arg Leu Gln Asn Val Gly Ala Asp Trp Val Asn Ala  
 100 105 110  
 Arg Glu Phe Val Pro Val Gly Lys Ile Pro Asp Thr His Ser Arg Ala  
 115 120 125  
 Asp Ser Glu Ala Ala Arg Asn Gln Ser Pro Gly Ser His Gly Gly Glu  
 130 135 140  
 Trp Arg Leu Pro Lys Gly Gln Glu Thr Ala Val Lys Val Ala Gly Ser  
 145 150 155 160  
 Val Ala Ala Lys Leu Ala Ser Ser Ser Leu Leu Val Asp Arg Ala Lys  
 165 170 175  
 Ala Val Ser Gln Asp Gln Ala Gly His Glu Asp Trp Glu Val Val Ser  
 180 185 190  
 Arg His Ser Ser Trp Gly Ser Val Gly Leu Gly Gly Ser Leu Glu Ala  
 195 200 205  
 Ser Arg Leu Ser Leu Asn Gln Arg Met Asp Asp Ser Thr Asn Ser Leu  
 210 215 220  
 Val Gly Gly Arg Gly Trp Glu Val Asp Gly Lys Val Ala Ser Leu Lys  
 225 230 235 240



Pro Gln Gln Val Ser Ile Gln Phe Gln Val His Tyr Thr Thr Asn Thr  
245 250 255  
Asp Val Gln Phe Ile Ala Val Thr Gly Asp His Glu Ser Leu Gly Arg  
260 265 270  
Trp Asn Thr Tyr Ile Pro Leu His Tyr Cys Lys Asp Gly Leu Trp Ser  
275 280 285  
His Ser Val Phe Leu Pro Ala Asp Thr Val Val Glu Trp Lys Phe Val  
290 295 300  
Leu Val Glu Asn Lys Glu Val Thr Arg Trp Glu Glu Cys Ser Asn Arg  
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325 330 335  
Ile His

<210> 17  
<211> 119  
<212> PRT  
<213> Mouse

<400> 17  
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35 40 45  
Met Leu Gly Ile Phe Phe Asn Val His Ser Ala Val Leu Ile Glu Asp  
50 55 60  
Val Pro Phe Thr Glu Lys Asp Phe Glu Asn Gly Pro Gln Asn Ile Tyr  
65 70 75 80  
Asn Leu Tyr Glu Gln Val Ser Tyr Asn Cys Phe Ile Ala Ala Gly Leu  
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Tyr Leu Leu Leu Gly Gly Phe Ser Phe Cys Gln Val Arg Leu Asn Lys  
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Arg Lys Glu Tyr Met Val Arg  
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<211> 280  
<212> PRT  
<213> Mouse

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Leu Pro Pro Pro Gly Thr Pro Ala Phe Ser Pro Thr Pro Glu Arg Pro  
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Gln Pro Thr Ala Leu Asp Gly Pro Val Pro Pro Thr Asn Leu Leu Glu  
65 70 75 80  
Gly Ile Met Asp Phe Phe Arg Gln Tyr Val Met Leu Ile Ala Val Val  
85 90 95  
Gly Ser Leu Thr Phe Leu Ile Met Phe Ile Val Cys Ala Ala Leu Ile

Thr Arg Gln Lys His Lys Ala Thr Ala Tyr Tyr Pro Ser Ser Phe Pro  
 115 120 125  
 Glu Lys Lys Tyr Val Asp Gln Arg Asp Arg Ala Gly Gly Pro Arg Thr  
 130 135 140  
 Phe Ser Glu Val Pro Asp Arg Ala Pro Asp Ser Arg His Glu Glu Gly  
 145 150 155 160  
 Leu Asp Thr Ser His Gln Leu Gln Ala Asp Ile Leu Ala Ala Thr Gln  
 165 170 175  
 Asn Leu Arg Ser Pro Ala Arg Ala Leu Pro Gly Asn Gly Glu Gly Ala  
 180 185 190  
 Lys Pro Val Lys Gly Gly Ser Glu Glu Glu Glu Glu Glu Val Leu Ser  
 195 200 205  
 Gly Gln Glu Glu Ala Gln Glu Ala Pro Val Cys Gly Val Thr Glu Glu  
 210 215 220  
 Lys Leu Gly Val Pro Glu Glu Ser Val Ser Ala Glu Ala Glu Gly Val  
 225 230 235 240  
 Pro Ala Thr Ser Glu Gly Gln Gly Glu Ala Glu Gly Ser Phe Ser Leu  
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 260 265 270  
 Cys Asn Arg Val Ser Pro Ser Val  
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<210> 19  
 <211> 188  
 <212> PRT  
 <213> Mouse

<400> 19  
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 Ala Ser Gly Asn His Ser Val Leu Thr Ser Asn Ile Asn Ile Thr Glu  
 35 40 45  
 Asn Thr Asn Gln Thr Met Ser Val Val Ser Asn Gln Thr Ser Glu Met  
 50 55 60  
 Gln Ser Thr Ala Lys Pro Ser Val Leu Pro Lys Thr Thr Thr Leu Ile  
 65 70 75 80  
 Thr Val Lys Pro Ala Thr Ile Val Lys Ile Ser Thr Pro Gly Val Leu  
 85 90 95  
 Pro His Val Thr Pro Thr Ala Ser Lys Ser Thr Pro Asn Ala Ser Ala  
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 Ser Pro Asn Ser Thr His Thr Ser Ala Ser Met Thr Thr Pro Ala His  
 115 120 125  
 Ser Ser Leu Leu Thr Thr Val Thr Val Ser Ala Thr Thr His Pro Thr  
 130 135 140  
 Lys Gly Lys Gly Ser Lys Phe Asp Ala Gly Ser Phe Val Gly Gly Ile  
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<210> 20  
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<212> PRT  
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<400> 20

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Met Arg Ser Gly Ala Leu Trp Pro Leu Leu Trp Gly Ala Leu Val Trp
 1          5          10          15
Thr Val Gly Ser Val Gly Ala Val Met Gly Ser Glu Asp Ser Val Pro
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Gly Gly Val Cys Trp Leu Gln Gln Gly Arg Glu Ala Thr Cys Ser Leu
      35          40          45
Val Leu Lys Thr Arg Val Ser Arg Glu Glu Cys Cys Ala Ser Gly Asn
      50          55          60
Ile Asn Thr Ala Trp Ser Asn Phe Thr His Pro Gly Asn Lys Ile Ser
65          70          75          80
Leu Leu Gly Phe Leu Gly Leu Val His Cys Leu Pro Cys Lys Asp Ser
      85          90          95
Cys Asp Gly Val Glu Cys Gly Pro Gly Lys Ala Cys Arg Asn Ala Gly
      100          105          110
Gly Ala Ser Asn Asn Cys Glu Cys Val Pro Asn Cys Glu Gly Phe Pro
      115          120          125
Ala Gly Phe Gln Val Cys Gly Ser Asp Gly Ala Thr Tyr Arg Asp Glu
      130          135          140
Cys Glu Leu Arg Thr Ala Arg Cys Arg Gly His Pro Asp Leu Arg Val
145          150          155          160
Met Tyr Arg Gly Arg Cys Gln Lys Ser Cys Ala Gln Val Val Cys Pro
      165          170          175
Arg Pro Gln Ser Cys Leu Val Asp Gln Thr Gly Ser Ala His Cys Val
      180          185          190
Val Cys Arg Ala Ala Pro Cys Pro Val Pro Ser Asn Pro Gly Gln Glu
      195          200          205
Leu Cys Gly Asn Asn Asn Val Thr Tyr Ile Ser Ser Cys His Leu Arg
      210          215          220
Gln Ala Thr Cys Phe Leu Gly Arg Ser Ile Gly Val Arg His Pro Gly
225          230          235          240
Ile Cys Thr Gly Gly Pro Lys Phe Leu Lys Ser Gly Asp Ala Ala Ile
      245          250          255
Val Asp Met Val Pro Gly Lys Pro Met Cys Val Glu Ser Phe Ser Asp
      260          265          270
Tyr Pro Pro Leu Gly Arg Phe Ala Val Arg Asp Met Arg Gln Thr Val
      275          280          285
Ala Val Gly Val Ile Lys Ala Val Asp Lys Lys Ala Ala Gly Ala Gly
      290          295          300
Lys Val Thr Lys Ser Ala Gln Lys Ala Gln Lys Ala Lys
305          310          315

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<210> 21  
<211> 384  
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<213> Mouse

<220>

<221> misc\_feature  
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<400> 21

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tgtgggtggc	cagaagtttg	tgggtgtgcc	cacgggtgat	gtgtgggtcac	ggcctgatgg	180
ctcctacctc	aacaagctgc	tcattctctcg	ggcccgcag	gatgatgctg	gcatgtacat	240
ctgcctaggt	gcaaatacca	tgggctacag	tttccgtagc	gccttcctca	ctgtattacc	300
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<210> 22

<211> 1967

<212> DNA

<213> Mouse

<400> 22

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ccggcgagat	gacgcggagc	cccgcgtgc	tgtctgtctg	attggggggc	ctcccgctcg	240
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gcctggggcg	cactgtgcgg	ctacagtgc	cagtggaggg	ggacccacca	ccgttgacca	360
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agggctctgaa	ggtgaaggag	gtggaggccg	aggatgccgg	tgtttatgtg	tgcaaggcca	480
ccaatggctt	tggcagcctc	agcgtcaact	acactctcat	catcatggat	gatattagtc	540
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caaacttgcc	catatagatg	tatgtactac	cagatgaaca	gccagccaga	ttcacacacg	1860
cacatgttta	aacgtgtaaa	cgtgtgcaca	actgcacaca	caacctgaga	aaccttcagg	1920
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<210> 23

<211> 1742

<212> DNA

<213> Mouse

<400> 23

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ggtagcgccg	ccccgcggcg	gcggggggcg	ggggcggggg	ggcggggatg	cgcgccccgg	180
ggcagcgatg	accgcgtcgc	gctgctcagg	ggcccggtc	tgaccccggt	gcctgctgcg	240



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<210> 26

<211> 545

<212> DNA

<213> Mouse

<400> 26

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agttggcctt	ccaagagatc	ggtgtggaca	gagctgaaga	agtgtctctt	tcagctggca	300
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tggaccccaa	gggtaaaatt	ctaggccgga	tagtccactg	cccaattctg	aagcaagggc	480
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<210> 27

<211> 2213

<212> DNA

<213> Mouse

<400> 27

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caactggact	gcagggggcag	atgatggtga	ctgggaagat	ggcaccagcc	gaagccagca	480
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gatcttctct	agagacctcc	ccatcgtctt	cgatgtctct	attcatgac	ccagccactt	840
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cctcggtctgg acggtttcat ccttaccgag cgcctgggca gtggcacgta cgccacggtg 180
tacaaggcct acgccaagaa ggatactcgg gaagtggtag ccataaaatg cgtggccaag 240
aagagtctca acaaggcgtc agtggaaaac ctctgactg agattgagat cctcaagggc 300
attcggcacc cccatatcgt gcagctgaaa gacttcagat gggacaatga caatatctac 360
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aatttgtgtt gatcaatgct caggagatgg atcctgcctt ggcaacatga agtgctgtag 180
caatagctgt ggtcatgtct gcaaaactcc tgtcttttaa atggttgaca gccatgtgga 240
agatggatcc aatcttcata aacatgaatg atggccagcc ccagaagatt tcttctgaat 300
tcacagagcc tgtgcttggc tacttcctag ccctagaatt gcattcttgg acaaggaaga 360
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tcaaaaaaaa aaaaaaa 437

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Val Lys Pro Val Ile Gln Trp Leu Lys Arg Val Glu Tyr Gly Ser Glu
          20          25          30

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Gly	Arg	His	Asn	Ser	Thr	Ile	Asp	Val	Gly	Gly	Gln	Lys	Phe	Val	Val
		35					40					45			
Leu	Pro	Thr	Gly	Asp	Val	Trp	Ser	Arg	Pro	Asp	Gly	Ser	Tyr	Leu	Asn
		50				55					60				
Lys	Leu	Leu	Ile	Ser	Arg	Ala	Arg	Gln	Asp	Asp	Ala	Gly	Met	Tyr	Ile
65					70					75					80
Cys	Leu	Gly	Ala	Asn	Thr	Met	Gly	Tyr	Ser	Phe	Arg	Ser	Ala	Phe	Leu
				85					90					95	
Thr	Val	Leu	Pro	Asp	Pro	Lys	Pro	Pro	Gly	Pro	Pro	Met	Ala	Ser	Ser
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Ser	Ser	Ser	Thr	Ser	Leu	Pro	Trp	Pro	Val	Xaa	Gly	Ile	Pro		
		115					120					125			

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<211> 529

<212> PRT

<213> Mouse

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Ser	Ala	Glu	Ala	Ala	Arg	Gly	Pro	Pro	Arg	Met	Ala	Asp	Lys	Val	Val
		20						25				30			
Pro	Arg	Gln	Val	Ala	Arg	Leu	Gly	Arg	Thr	Val	Arg	Leu	Gln	Cys	Pro
		35					40					45			
Val	Glu	Gly	Asp	Pro	Pro	Pro	Leu	Thr	Met	Trp	Thr	Lys	Asp	Gly	Arg
	50					55					60				
Thr	Ile	His	Ser	Gly	Trp	Ser	Arg	Phe	Arg	Val	Leu	Pro	Gln	Gly	Leu
65					70					75					80
Lys	Val	Lys	Glu	Val	Glu	Ala	Glu	Asp	Ala	Gly	Val	Tyr	Val	Cys	Lys
				85					90					95	
Ala	Thr	Asn	Gly	Phe	Gly	Ser	Leu	Ser	Val	Asn	Tyr	Thr	Leu	Ile	Ile
		100						105					110		
Met	Asp	Asp	Ile	Ser	Pro	Gly	Lys	Glu	Ser	Pro	Gly	Pro	Gly	Gly	Ser
	115					120						125			
Ser	Gly	Gly	Gln	Glu	Asp	Pro	Ala	Ser	Gln	Gln	Trp	Ala	Arg	Pro	Arg
	130					135					140				
Phe	Thr	Gln	Pro	Ser	Lys	Met	Arg	Arg	Arg	Val	Ile	Ala	Arg	Pro	Val
145					150					155					160
Gly	Ser	Ser	Val	Arg	Leu	Lys	Cys	Val	Ala	Ser	Gly	His	Pro	Arg	Pro
				165					170					175	
Asp	Ile	Met	Trp	Met	Lys	Asp	Asp	Gln	Thr	Leu	Thr	His	Leu	Glu	Ala
		180						185					190		
Ser	Glu	His	Arg	Lys	Lys	Lys	Trp	Thr	Leu	Ser	Leu	Lys	Asn	Leu	Lys
	195						200					205			
Pro	Glu	Asp	Ser	Gly	Lys	Tyr	Thr	Cys	Arg	Val	Ser	Asn	Lys	Ala	Gly
	210					215						220			
Ala	Ile	Asn	Ala	Thr	Tyr	Lys	Val	Asp	Val	Ile	Gln	Arg	Thr	Arg	Ser
225					230					235					240
Lys	Pro	Val	Leu	Thr	Gly	Thr	His	Pro	Val	Asn	Thr	Thr	Val	Asp	Phe
				245					250					255	
Gly	Gly	Thr	Thr	Ser	Phe	Gln	Cys	Lys	Val	Arg	Ser	Asp	Val	Lys	Pro
			260					265					270		
Val	Ile	Gln	Trp	Leu	Lys	Arg	Val	Glu	Tyr	Gly	Ser	Glu	Gly	Arg	His
	275						280					285			
Asn	Ser	Thr	Ile	Asp	Val	Gly	Gly	Gln	Lys	Phe	Val	Val	Leu	Pro	Thr
	290					295						300			



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 340 345 350  
 Pro Asp Pro Lys Pro Pro Gly Pro Pro Met Ala Ser Ser Ser Ser  
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 Thr Ser Leu Pro Trp Pro Val Val Ile Gly Ile Pro Ala Gly Ala Val  
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 Ser Cys Gly Gly Gln Gly Ser Ser Thr Pro Ala Cys Pro Leu Ser Val  
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 <211> 439  
 <212> PRT  
 <213> Mouse

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 Gly Pro Gly Gly Ser Ser Gly Gly Gln Glu Asp Pro Ala Ser Gln Gln  
 35 40 45  
 Trp Ala Arg Pro Arg Phe Thr Gln Pro Ser Lys Met Arg Arg Arg Val  
 50 55 60  
 Ile Ala Arg Pro Val Gly Ser Ser Val Arg Leu Lys Cys Val Ala Ser  
 65 70 75 80  
 Gly His Pro Arg Pro Asp Ile Met Trp Met Lys Asp Asp Gln Thr Leu  
 85 90 95  
 Thr His Leu Glu Ala Ser Glu His Arg Lys Lys Lys Trp Thr Leu Ser  
 100 105 110  
 Leu Lys Asn Leu Lys Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val  
 115 120 125  
 Ser Asn Lys Ala Gly Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile  
 130 135 140  
 Gln Arg Thr Arg Ser Lys Pro Val Leu Thr Gly Thr His Pro Val Asn  
 145 150 155 160

Thr Thr Val Asp Phe Gly Gly Thr Thr Ser Phe Gln Cys Lys Val Arg  
165 170 175  
Ser Asp Val Lys Pro Val Ile Gln Trp Leu Lys Arg Val Glu Tyr Gly  
180 185 190  
Ser Glu Gly Arg His Asn Ser Thr Ile Asp Val Gly Gly Gln Lys Phe  
195 200 205  
Val Val Leu Pro Thr Gly Asp Val Trp Ser Arg Pro Asp Gly Ser Tyr  
210 215 220  
Leu Asn Lys Leu Leu Ile Ser Arg Ala Arg Gln Asp Asp Ala Gly Met  
225 230 235 240  
Tyr Ile Cys Leu Gly Ala Asn Thr Met Gly Tyr Ser Phe Arg Ser Ala  
245 250 255  
Phe Leu Thr Val Leu Pro Asp Pro Lys Pro Pro Pro Gly Pro Pro Met  
260 265 270  
Ala Ser Ser Ser Ser Ser Thr Ser Leu Pro Trp Pro Val Val Ile Gly  
275 280 285  
Ile Pro Ala Gly Ala Val Phe Ile Leu Gly Thr Val Leu Leu Trp Leu  
290 295 300  
Cys Gln Thr Lys Lys Lys Pro Cys Ala Pro Ala Ser Thr Leu Pro Val  
305 310 315 320  
Pro Gly His Arg Pro Pro Gly Thr Ser Arg Glu Arg Ser Gly Asp Lys  
325 330 335  
Asp Leu Pro Ser Leu Ala Val Gly Ile Cys Glu Glu His Gly Ser Ala  
340 345 350  
Met Ala Pro Gln His Ile Leu Ala Ser Gly Ser Thr Ala Gly Pro Lys  
355 360 365  
Leu Tyr Pro Lys Leu Tyr Thr Asp Val His Thr His Thr His Thr His  
370 375 380  
Thr Cys Thr His Thr Leu Ser Cys Gly Gly Gln Gly Ser Ser Thr Pro  
385 390 395 400  
Ala Cys Pro Leu Ser Val Leu Asn Thr Ala Asn Leu Gln Ala Leu Cys  
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<210> 33  
<211> 322  
<212> PRT  
<213> Human

<400> 33  
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Pro Ser His Arg Pro Pro Pro Pro Glu Ala Pro Gln Arg Trp Arg Thr  
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35 40 45  
Val Pro Val Glu Gly Asp Pro Pro Pro Leu Thr Met Trp Thr Lys Asp  
50 55 60  
Gly Arg Thr Ile His Ser Gly Trp Ser Arg Phe Arg Val Leu Pro Gln  
65 70 75 80  
Gly Leu Lys Val Lys Gln Val Glu Arg Glu Asp Ala Gly Val Tyr Val  
85 90 95  
Cys Lys Ala Thr Asn Gly Phe Gly Ser Leu Ser Val Asn Tyr Thr Leu  
100 105 110

Val Val Leu Asp Asp Ile Ser Pro Gly Lys Glu Ser Leu Gly Pro Asp  
 115 120 125  
 Ser Ser Ser Gly Gly Gln Glu Asp Pro Ala Ser Gln Gln Trp Ala Arg  
 130 135 140  
 Pro Arg Phe Thr Gln Pro Ser Lys Met Arg Arg Arg Val Ile Ala Arg  
 145 150 155 160  
 Pro Val Gly Ser Ser Val Arg Leu Lys Cys Val Ala Ser Gly His Pro  
 165 170 175  
 Arg Pro Asp Ile Thr Trp Met Lys Asp Asp Gln Ala Leu Thr Arg Pro  
 180 185 190  
 Glu Ala Ala Glu Pro Arg Lys Lys Lys Trp Thr Leu Ser Leu Lys Asn  
 195 200 205  
 Leu Arg Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val Ser Asn Arg  
 210 215 220  
 Ala Gly Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile Gln Arg Thr  
 225 230 235 240  
 Arg Ser Lys Pro Val Leu Thr Gly Thr His Pro Val Asn Thr Thr Val  
 245 250 255  
 Asp Phe Gly Gly Thr Thr Ser Phe Gln Cys Lys Val Arg Ser Asp Val  
 260 265 270  
 Lys Pro Val Ile Gln Trp Leu Lys Arg Val Glu Tyr Gly Ala Glu Gly  
 275 280 285  
 Arg His Asn Ser Thr Ile Asp Val Gly Gly Gln Lys Phe Val Val Leu  
 290 295 300  
 Pro Thr Gly Asp Val Trp Ser Arg Pro Asp Gly Ser Tyr Leu Asn Lys  
 305 310 315 320  
 Pro Leu

<210> 34  
 <211> 102  
 <212> PRT  
 <213> Mouse

<400> 34  
 Met Lys Phe Leu Leu Ile Ser Leu Ala Leu Trp Leu Gly Thr Val Gly  
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 20 25 30  
 Gln Val Ala Leu Glu Glu Phe His Lys His Pro Pro Val Gln Leu Ala  
 35 40 45  
 Phe Gln Glu Ile Gly Val Asp Arg Ala Glu Glu Val Leu Phe Ser Ala  
 50 55 60  
 Gly Thr Phe Val Arg Leu Glu Phe Lys Leu Gln Gln Thr Asn Cys Pro  
 65 70 75 80  
 Lys Lys Asp Trp Lys Lys Pro Glu Cys Thr Ile Lys Pro Asn Gly Ala  
 85 90 95  
 Glu Met Pro Gly Leu His  
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<210> 35  
 <211> 147  
 <212> PRT  
 <213> Mouse

<400> 35  
 Met Lys Phe Leu Leu Ile Ser Leu Ala Leu Trp Leu Gly Thr Val Gly

1	5	10	15
Thr Arg Gly Thr Glu Pro Glu Leu Ser Glu Thr Gln Arg Arg Ser Leu			
20	25	30	
Gln Val Ala Leu Glu Glu Phe His Lys His Pro Pro Val Gln Leu Ala			
35	40	45	
Phe Gln Glu Ile Gly Val Asp Arg Ala Glu Glu Val Leu Phe Ser Ala			
50	55	60	
Gly Thr Phe Val Arg Leu Glu Phe Lys Leu Gln Gln Thr Asn Cys Pro			
65	70	75	80
Lys Lys Asp Trp Lys Lys Pro Glu Cys Thr Ile Lys Pro Asn Gly Arg			
85	90	95	
Arg Arg Lys Cys Leu Ala Cys Ile Lys Met Asp Pro Lys Gly Lys Ile			
100	105	110	
Leu Gly Arg Ile Val His Cys Pro Ile Leu Lys Gln Gly Pro Gln Asp			
115	120	125	
Pro Gln Glu Leu Gln Cys Ile Lys Ile Ala Gln Ala Gly Glu Asp Pro			
130	135	140	
His Gly Tyr			
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<210> 36  
 <211> 574  
 <212> PRT  
 <213> Mouse

<400> 36	
Met Glu Ser Leu Cys Gly Val Leu Gly Phe Leu Leu Leu Ala Ala Gly	
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Leu Pro Leu Gln Ala Ala Lys Arg Phe Arg Asp Val Leu Gly His Glu	
20	25 30
Gln Tyr Pro Asn His Met Arg Glu His Asn Gln Leu Arg Gly Trp Ser	
35	40 45
Ser Asp Glu Asn Glu Trp Asp Glu His Leu Tyr Pro Val Trp Arg Arg	
50	55 60
Gly Asp Gly Arg Trp Lys Asp Ser Trp Glu Gly Gly Arg Val Gln Ala	
65	70 75 80
Val Leu Thr Ser Asp Ser Pro Ala Leu Val Gly Ser Asn Ile Thr Phe	
85	90 95
Val Val Asn Leu Val Phe Pro Arg Cys Gln Lys Glu Asp Ala Asn Gly	
100	105 110
Asn Ile Val Tyr Glu Lys Asn Cys Arg Asn Asp Leu Gly Leu Thr Ser	
115	120 125
Asp Leu His Val Tyr Asn Trp Thr Ala Gly Ala Asp Asp Gly Asp Trp	
130	135 140
Glu Asp Gly Thr Ser Arg Ser Gln His Leu Arg Phe Pro Asp Arg Arg	
145	150 155 160
Pro Phe Pro Arg Pro His Gly Trp Lys Lys Trp Ser Phe Val Tyr Val	
165	170 175
Phe His Thr Leu Gly Gln Tyr Phe Gln Lys Leu Gly Arg Cys Ser Ala	
180	185 190
Arg Val Ser Ile Asn Thr Val Asn Leu Thr Ala Gly Pro Gln Val Met	
195	200 205
Glu Val Thr Val Phe Arg Arg Tyr Gly Arg Ala Tyr Ile Pro Ile Ser	
210	215 220
Lys Val Lys Asp Val Tyr Val Ile Thr Asp Gln Ile Pro Val Phe Val	
225	230 235 240
Thr Met Ser Gln Lys Asn Asp Arg Asn Leu Ser Asp Glu Ile Phe Leu	



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Thr Val Leu Phe Leu Val Ala Leu Ile Thr Val Gly Met Asn Thr Thr  
   1               5           10              15  
Tyr Val Val Ser Cys Pro Lys Glu Phe Glu Lys Pro Gly Ala Cys Pro  
          20            25             30  
Lys Pro Ser Pro Glu Ser Val Gly Ile Cys Val Asp Gln Cys Ser Gly  
        35         40       45  
Asp Gly Ser Cys Pro Gly Asn Met Lys Cys Cys Ser Asn Ser Cys Gly  
    50      55     60  
His Val Cys Lys Thr Pro Val Phe  
65       70
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 <212> DNA  
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<212> DNA  
<213> Mouse

<400> 43

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<211> 3767  
<212> DNA  
<213> Mouse

<400> 44

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 <211> 464  
 <212> PRT  
 <213> Mouse

<400> 47  
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Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg Tyr Tyr Lys Val Asn  
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Leu Lys Lys Pro Cys Pro Phe Trp Asn Asp Ile Asn Gln Cys Gly Arg  
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Arg Asp Cys Ala Val Lys Pro Cys His Ser Asp Glu Val Pro Asp Gly  
100 105 110  
Ile Lys Ser Ala Ser Tyr Lys Tyr Ser Glu Glu Ala Asn Arg Ile Glu  
115 120 125  
Glu Cys Glu Gln Ala Glu Arg Leu Gly Ala Val Asp Glu Ser Leu Ser  
130 135 140  
Glu Glu Thr Gln Lys Ala Val Leu Gln Trp Thr Lys His Asp Asp Ser  
145 150 155 160  
Ser Asp Ser Phe Cys Glu Ile Asp Asp Ile Gln Ser Pro Asp Ala Glu  
165 170 175  
Tyr Val Asp Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys Gly  
180 185 190  
Pro Asp Ala Trp Arg Ile Trp Ser Val Ile Tyr Glu Glu Asn Cys Phe  
195 200 205  
Lys Pro Gln Thr Ile Gln Arg Pro Leu Ala Ser Gly Arg Gly Lys Ser  
210 215 220  
Lys Glu Asn Thr Phe Tyr Asn Trp Leu Glu Gly Leu Cys Val Glu Lys  
225 230 235 240  
Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His Ala Ser Ile Asn Val  
245 250 255  
His Leu Ser Ala Arg Tyr Leu Leu Gln Asp Thr Trp Leu Glu Lys Lys  
260 265 270  
Trp Gly His Asn Val Thr Glu Phe Gln Gln Arg Phe Asp Gly Ile Leu  
275 280 285  
Thr Glu Gly Glu Gly Pro Arg Arg Leu Arg Asn Leu Tyr Phe Leu Tyr  
290 295 300  
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Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Val Gln Asp Ala Glu Asn  
325 330 335  
Lys Ala Leu Leu Leu Glu Ile Leu His Glu Ile Lys Ser Phe Pro Leu  
340 345 350  
His Phe Asp Glu Asn Ser Phe Phe Ala Gly Asp Lys Asn Glu Ala His  
355 360 365  
Lys Leu Lys Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile  
370 375 380  
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385 390 395 400  
Thr Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu  
405 410 415  
Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe Gln Leu Thr  
420 425 430  
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<210> 48  
<211> 664

<212> PRT  
<213> Mouse

<400> 48

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Lys	Phe	Leu	Val	Val	Trp	Ala	Leu	Val	Leu	Leu	Ala	Asp	Phe	Val	Leu
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Glu	Phe	Arg	Phe	Glu	Tyr	Leu	Trp	Pro	Phe	Trp	Leu	Phe	Ile	Arg	Ser
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Val	Tyr	Asp	Ser	Phe	Arg	Tyr	Gln	Gly	Leu	Ala	Phe	Ser	Val	Phe	Phe
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Val	Cys	Val	Ala	Phe	Thr	Ser	Asn	Ile	Ile	Cys	Leu	Leu	Phe	Ile	Pro
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Ile	Gln	Trp	Leu	Phe	Phe	Ala	Ala	Ser	Thr	Tyr	Val	Trp	Val	Gln	Tyr
			100					105					110		
Val	Trp	His	Thr	Glu	Arg	Gly	Val	Cys	Leu	Pro	Thr	Val	Ser	Leu	Trp
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	130					135						140			
Asn	Phe	His	Val	Asp	Leu	Cys	Arg	Pro	Phe	Ala	Ala	His	Cys	Ile	Gly
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Tyr	Pro	Val	Val	Thr	Leu	Gly	Phe	Gly	Phe	Lys	Ser	Tyr	Val	Ser	Tyr
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Lys	Met	Arg	Leu	Arg	Lys	Gln	Lys	Glu	Val	Gln	Lys	Glu	Asn	Glu	Phe
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Tyr	Met	Gln	Leu	Leu	Gln	Gln	Ala	Leu	Pro	Pro	Glu	Gln	Gln	Met	Leu
		195					200						205		
Gln	Lys	Gln	Glu	Lys	Glu	Ala	Glu	Glu	Ala	Ala	Lys	Gly	Leu	Pro	Asp
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Met	Asp	Ser	Ser	Ile	Leu	Ile	His	His	Asn	Gly	Gly	Ile	Pro	Ala	Asn
225					230					235					240
Lys	Lys	Leu	Ser	Thr	Thr	Leu	Pro	Glu	Ile	Glu	Tyr	Arg	Glu	Lys	Gly
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Lys	Glu	Lys	Asp	Lys	Asp	Ala	Lys	Lys	His	Asn	Leu	Gly	Ile	Asn	Asn
			260					265					270		
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Ser	Thr	Glu	Asn	Leu	Leu	Lys	Glu	Asp	Ser	Cys	Thr	Ala	Ser	Ser	Lys
305					310					315					320
Asn	Tyr	Lys	Asn	Ala	Ser	Gly	Val	Val	Asn	Ser	Ser	Pro	Arg	Ser	His
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Ser	Ala	Thr	Asn	Gly	Ser	Ile	Pro	Ser	Ser	Ser	Ser	Lys	Asn	Glu	Lys
			340					345					350		
Lys	Gln	Lys	Cys	Thr	Ser	Lys	Gly	Pro	Ser	Ala	His	Lys	Asp	Leu	Met
		355					360					365			
Glu	Asn	Cys	Ile	Pro	Asn	Asn	Gln	Leu	Ser	Lys	Pro	Asp	Ala	Leu	Val
	370					375					380				
Arg	Leu	Glu	Gln	Asp	Ile	Lys	Lys	Leu	Lys	Ala	Asp	Leu	Gln	Ala	Ser
385					390					395					400
Arg	Gln	Val	Glu	Gln	Glu	Leu	Arg	Ser	Gln	Ile	Ser	Ala	Leu	Ser	Ser
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<210> 49
<211> 199
<212> PRT
<213> Mouse
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<400> 49																
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			20					25					30			
Gly	Ala	Ala	Lys	Asn	Phe	Glu	Asp	Val	Arg	Cys	Lys	Cys	Ile	Cys	Pro	
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Pro	Tyr	Lys	Glu	Asn	Pro	Gly	His	Ile	Tyr	Asn	Lys	Asn	Ile	Ser	Gln	
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Lys	Asp	Cys	Asp	Cys	Leu	His	Val	Val	Glu	Pro	Met	Pro	Val	Arg	Gly	
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Pro	Asp	Val	Glu	Ala	Tyr	Cys	Leu	Arg	Cys	Glu	Cys	Lys	Tyr	Glu	Glu	
				85					90					95		
Arg	Ser	Ser	Val	Thr	Ile	Lys	Val	Thr	Ile	Ile	Ile	Tyr	Leu	Ser	Ile	
			100					105					110			
Leu	Gly	Leu	Leu	Leu	Leu	Tyr	Met	Val	Tyr	Leu	Thr	Leu	Val	Glu	Pro	
		115					120					125				
Ile	Leu	Lys	Arg	Arg	Leu	Phe	Gly	His	Ser	Gln	Leu	Leu	Gln	Ser	Asp	
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Asp	Asp	Val	Gly	Asp	His	Gln	Pro	Phe	Ala	Asn	Ala	His	Asp	Val	Leu	

145                      150                      155                      160  
 Ala Arg Ser Arg Ser Arg Ala Asn Val Leu Asn Lys Val Glu Tyr Ala  
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 Gln Gln Arg Trp Lys Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe  
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 Asp Arg His Val Val Leu Ser  
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<210> 50  
 <211> 227  
 <212> PRT  
 <213> Mouse

<400> 50  
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                                   20                                  25                                  30  
 Arg Val Ser Cys Thr Tyr Asp Ala Leu Lys His Trp Gly Arg Arg Lys  
                                   35                                  40                                  45  
 Ala Trp Cys Arg Gln Leu Gly Glu Glu Gly Pro Cys Gln Arg Val Val  
   50                                  55                                  60  
 Ser Thr His Gly Val Trp Leu Leu Ala Phe Leu Lys Lys Arg Asn Gly  
  65                                  70                                  75                                  80  
 Ser Thr Val Ile Ala Asp Asp Thr Leu Ala Gly Thr Val Thr Ile Thr  
                                   85                                  90                                  95  
 Leu Lys Asn Leu Gln Ala Gly Asp Ala Gly Leu Tyr Gln Cys Gln Ser  
                                  100                                 105                                 110  
 Leu Arg Gly Arg Glu Ala Glu Val Leu Gln Lys Val Leu Val Glu Val  
                                  115                                 120                                 125  
 Leu Glu Asp Pro Leu Asp Asp Gln Asp Ala Gly Asp Leu Trp Val Pro  
                                  130                                 135                                 140  
 Glu Glu Ser Ser Ser Phe Glu Gly Ala Gln Val Glu His Ser Thr Ser  
  145                                 150                                 155                                 160  
 Arg Asn Gln Glu Thr Ser Phe Pro Pro Thr Ser Ile Leu Leu Leu Leu  
                                  165                                 170                                 175  
 Ala Cys Val Leu Leu Ser Lys Phe Leu Ala Ala Ser Ile Leu Trp Ala  
                                  180                                 185                                 190  
 Val Ala Arg Gly Arg Gln Lys Pro Gly Thr Pro Val Val Arg Gly Leu  
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 Asp Cys Gly Gln Asp Ala Gly His Gln Leu Gln Ile Leu Thr Gly Pro  
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 Gly Gly Thr  
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<210> 51  
 <211> 503  
 <212> PRT  
 <213> Mouse

<400> 51  
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                                   20                                  25                                  30  
 Gly His Ile Val Thr Ser Gln Asp Ser Gly Thr Met Thr Ser Lys Asn  
                                   35                                  40                                  45

Tyr	Pro	Gly	Thr	Tyr	Pro	Asn	Tyr	Thr	Val	Cys	Glu	Lys	Ile	Ile	Thr
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Val	Pro	Lys	Gly	Lys	Arg	Leu	Ile	Leu	Arg	Leu	Gly	Asp	Leu	Asn	Ile
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Glu	Ser	Lys	Thr	Cys	Ala	Ser	Asp	Tyr	Leu	Leu	Phe	Ser	Ser	Ala	Thr
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Asp	Gln	Tyr	Gly	Pro	Tyr	Cys	Gly	Ser	Trp	Ala	Val	Pro	Lys	Glu	Leu
			100					105					110		
Arg	Leu	Asn	Ser	Asn	Glu	Val	Thr	Val	Leu	Phe	Lys	Ser	Gly	Ser	His
		115					120					125			
Ile	Ser	Gly	Arg	Gly	Phe	Leu	Leu	Thr	Tyr	Ala	Ser	Ser	Asp	His	Pro
	130					135					140				
Asp	Leu	Ile	Thr	Cys	Leu	Glu	Arg	Gly	Ser	His	Tyr	Phe	Glu	Glu	Lys
145					150					155					160
Tyr	Ser	Lys	Phe	Cys	Pro	Ala	Gly	Cys	Arg	Asp	Ile	Ala	Arg	Asp	Ile
				165					170					175	
Ser	Gly	Asn	Thr	Lys	Asp	Gly	Tyr	Arg	Asp	Thr	Ser	Leu	Leu	Cys	Lys
			180					185					190		
Ala	Ala	Ile	His	Ala	Gly	Ile	Ile	Thr	Asp	Glu	Leu	Gly	Gly	His	Ile
		195					200					205			
Asn	Leu	Leu	Gln	Ser	Lys	Gly	Ile	Ser	His	Tyr	Glu	Gly	Leu	Leu	Ala
	210					215					220				
Asn	Gly	Val	Leu	Ser	Arg	His	Gly	Ser	Leu	Ser	Glu	Lys	Arg	Phe	Leu
225					230					235					240
Phe	Thr	Thr	Pro	Gly	Met	Asn	Ile	Thr	Thr	Val	Ala	Ile	Pro	Ser	Val
				245					250					255	
Ile	Phe	Ile	Ala	Leu	Leu	Leu	Thr	Gly	Met	Gly	Ile	Phe	Ala	Ile	Cys
			260					265					270		
Arg	Lys	Arg	Lys	Lys	Lys	Gly	Asn	Pro	Tyr	Val	Ser	Ala	Asp	Ala	Gln
		275					280					285			
Lys	Thr	Gly	Cys	Trp	Lys	Gln	Ile	Lys	Tyr	Pro	Phe	Ala	Arg	His	Gln
	290					295					300				
Ser	Thr	Glu	Phe	Thr	Ile	Ser	Tyr	Asp	Asn	Glu	Lys	Glu	Met	Thr	Gln
305					310					315					320
Lys	Leu	Asp	Leu	Ile	Thr	Ser	Asp	Met	Ala	Asp	Tyr	Gln	Gln	Pro	Leu
				325					330					335	
Met	Ile	Gly	Thr	Gly	Thr	Val	Ala	Arg	Lys	Gly	Ser	Thr	Phe	Arg	Pro
			340					345					350		
Met	Asp	Thr	Asp	Thr	Glu	Glu	Val	Arg	Val	Asn	Thr	Glu	Ala	Ser	Gly
		355					360					365			
His	Tyr	Asp	Cys	Pro	His	Arg	Pro	Gly	Arg	His	Glu	Tyr	Ala	Leu	Pro
	370					375					380				
Leu	Thr	His	Ser	Glu	Pro	Glu	Tyr	Ala	Thr	Pro	Ile	Val	Glu	Arg	His
385					390					395					400
Leu	Leu	Arg	Ala	His	Thr										



500

<210> 52  
 <211> 757  
 <212> PRT  
 <213> Mouse

<400> 52

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			20					25					30		
Leu	Arg	Leu	Val	Gly	Pro	Ala	Asp	Arg	Pro	Lys	Glu	Gly	Arg	Leu	Glu
		35					40					45			
Val	Leu	His	Gln	Gly	Gln	Trp	Gly	Thr	Val	Cys	Asp	Asp	Asp	Phe	Ala
		50				55					60				
Leu	Gln	Glu	Ala	Thr	Val	Ala	Cys	Arg	Gln	Leu	Gly	Phe	Glu	Ser	Ala
65					70					75					80
Leu	Thr	Trp	Ala	His	Ser	Ala	Lys	Tyr	Gly	Gln	Gly	Glu	Gly	Pro	Ile
				85					90					95	
Trp	Leu	Asp	Asn	Val	Arg	Cys	Leu	Gly	Thr	Glu	Lys	Thr	Leu	Asp	Gln
			100					105					110		
Cys	Gly	Ser	Asn	Gly	Trp	Gly	Ile	Ser	Asp	Cys	Arg	His	Ser	Glu	Asp
		115					120					125			
Val	Gly	Val	Val	Cys	His	Pro	Arg	Arg	Gln	His	Gly	Tyr	His	Ser	Glu
		130					135					140			
Lys	Val	Ser	Asn	Ala	Leu	Gly	Pro	Gln	Gly	Arg	Arg	Leu	Glu	Glu	Val
145					150					155					160
Arg	Leu	Lys	Pro	Ile	Leu	Ala	Ser	Ala	Lys	Arg	His	Ser	Pro	Val	Thr
				165					170					175	
Glu	Gly	Ala	Val	Glu	Val	Arg	Tyr	Asp	Gly	His	Trp	Arg	Gln	Val	Cys
			180					185					190		
Asp	Gln	Gly	Trp	Thr	Met	Asn	Asn	Ser	Arg	Val	Val	Cys	Gly	Met	Leu
		195					200					205			
Gly	Phe	Pro	Ser	Gln	Thr	Ser	Val	Asn	Ser	His	Tyr	Tyr	Arg	Lys	Val
		210				215					220				
Trp	Asn	Leu	Lys	Met	Lys	Asp	Pro	Lys	Ser	Arg	Leu	Asn	Ser	Leu	Thr
225					230					235					240
Lys	Lys	Asn	Ser	Phe	Trp	Ile	His	Arg	Val	Asp	Cys	Phe	Gly	Thr	Glu
				245					250					255	
Pro	His	Leu	Ala	Lys	Cys	Gln	Val	Gln	Val	Ala	Pro	Gly	Arg	Gly	Lys
			260					265					270		
Leu	Arg	Ala	Ala	Cys	Pro	Gly	Gly	Met	His	Ala	Val	Val	Ser	Cys	Val
		275					280					285			
Ala	Gly	Pro	His	Phe	Arg	Arg	Gln	Lys	Pro	Lys	Pro	Thr	Arg	Lys	Glu
		290				295					300				
Ser	His	Ala	Glu	Glu	Leu	Lys	Val	Arg	Leu	Arg	Ser	Gly	Ala	Gln	Val
305					310					315					320
Gly	Glu	Gly	Arg	Val	Glu	Val	Leu	Met	Asn	Arg	Gln	Trp	Gly	Thr	Val
			325						330					335	
Cys	Asp	His	Arg	Trp	Asn	Leu	Ile	Ser	Ala	Ser	Val	Val	Cys	Arg	Gln
			340					345					350		
Leu	Gly	Phe	Gly	Ser	Ala	Arg	Glu	Ala	Leu	Phe	Gly	Ala	Gln	Leu	Gly
		355					360					365			
Gln	Gly	Leu	Gly	Pro	Ile	His	Leu	Ser	Glu	Val	Arg	Cys	Arg	Gly	Tyr
		370				375					380				
Glu	Arg	Thr	Leu	Gly	Asp	Cys	Leu	Ala	Leu	Glu	Gly	Ser	Gln	Asn	Gly

385                      390                      395                      400  
 Cys Gln His Ala Asn Asp Ala Ala Val Arg Cys Asn Ile Pro Asp Met  
                                  405                      410                      415  
 Gly Phe Gln Asn Lys Val Arg Leu Ala Gly Gly Arg Asn Ser Glu Glu  
                                  420                      425                      430  
 Gly Val Val Glu Val Gln Val Glu Val Asn Gly Val Pro Arg Trp Gly  
                                  435                      440                      445  
 Thr Val Cys Ser Asp His Trp Gly Leu Thr Glu Ala Met Val Thr Cys  
                                  450                      455                      460  
 Arg Gln Leu Gly Leu Gly Phe Ala Asn Phe Ala Leu Lys Asp Thr Trp  
 465                                   470                      475                      480  
 Tyr Trp Gln Gly Thr Pro Glu Ala Lys Glu Val Val Met Ser Gly Val  
                                  485                      490                      495  
 Arg Cys Ser Gly Thr Glu Met Ala Leu Gln Gln Cys Gln Arg His Gly  
                                  500                      505                      510  
 Pro Val His Cys Ser His Gly Pro Gly Arg Phe Ser Ala Gly Val Ala  
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 Cys Met Asn Ser Ala Pro Asp Leu Val Met Asn Ala Gln Leu Val Gln  
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 Glu Thr Ala Tyr Leu Glu Asp Arg Pro Leu Ser Met Leu Tyr Cys Ala  
 545                                   550                      555                      560  
 His Glu Glu Asn Cys Leu Ser Lys Ser Ala Asp His Met Asp Trp Pro  
                                  565                      570                      575  
 Tyr Gly Tyr Arg Arg Leu Leu Arg Phe Ser Ser Gln Ile Tyr Asn Leu  
                                  580                      585                      590  
 Gly Arg Ala Asp Phe Arg Pro Lys Ala Gly Arg His Ser Trp Ile Trp  
                                  595                      600                      605  
 His Gln Cys His Arg His Tyr His Ser Ile Glu Val Phe Thr His Tyr  
 610                                   615                      620  
 Asp Leu Leu Thr Leu Asn Gly Ser Lys Val Ala Glu Gly His Lys Ala  
 625                                   630                      635                      640  
 Ser Phe Cys Leu Glu Asp Thr Asn Cys Pro Ser Gly Val Gln Arg Arg  
                                  645                      650                      655  
 Tyr Ala Cys Ala Asn Phe Gly Glu Gln Gly Val Ala Val Gly Cys Trp  
                                  660                      665                      670  
 Asp Thr Tyr Arg His Asp Ile Asp Cys Gln Trp Val Asp Ile Thr Asp  
                                  675                      680                      685  
 Val Gly Pro Gly Asp Tyr Ile Phe Gln Val Val Val Asn Pro Thr Asn  
 690                                   695                      700  
 Asp Val Ala Glu Ser Asp Phe Ser Asn Asn Met Ile Arg Cys Arg Cys  
 705                                   710                      715                      720  
 Lys Tyr Asp Gly Gln Arg Val Trp Leu His Asn Cys His Thr Gly Asp  
                                  725                      730                      735  
 Ser Tyr Arg Ala Asn Ala Glu Leu Ser Leu Glu Gln Glu Gln Arg Leu  
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20 25 30  
 Glu Asp Pro Asn Met Lys Pro Thr Pro Lys Ala Pro Thr Pro Lys Lys  
 35 40 45  
 Pro Ser Gly Gly Phe Asp Leu Glu Asp Ala Leu Pro Gly Gly Gly Gly  
 50 55 60  
 Gly Gly Ala Gly Glu Lys Pro Gly Asn Arg Pro Gln Pro Asp Pro Lys  
 65 70 75 80  
 Pro Pro Arg Pro His Gly Asp Ser Gly Gly Ile Ser Asp Ser Asp Leu  
 85 90 95  
 Ala Asp Ala Ala Gly Gln Gly Gly Gly Ala Gly Arg Arg Gly Ser Gly  
 100 105 110  
 Asp Glu Gly Gly His Gly Gly Ala Gly Gly Ala Glu Pro Glu Gly Thr  
 115 120 125  
 Pro Gln Gly Leu Val Pro Gly Val Val Ala Ala Val Val Ala Ala Val  
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 <212> DNA

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30

<210> 55

<211> 35

<212> DNA

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<223> Made in a lab

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35

<210> 56

<211> 37

<212> DNA

<213> Artificial Sequence

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<223> Made in a lab

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37

<210> 57

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<212> DNA

<213> Artificial Sequence

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<223> Made in a lab

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18

<210> 58

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<212> DNA

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<400> 58

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caacaaggcg	tcagtggaaa	acctcctgac	tgagattgag	atcctcaagg	gcattcggca	360
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Lys Pro Arg Val Trp Ser Val Pro Glu Asp Pro Tyr Gln Pro Arg Gln  
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 Ala Thr Asn Asp Gln Ala Gln Ser Ser His Ser Pro Gly Leu Glu Ala  
 290 295 300  
 Asn Thr His Leu Ile Gly Asp  
 305 310

<210> 60  
 <211> 373  
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 <213> Mouse

<400> 60

Met Thr Arg Ser Pro Ala Leu Leu Leu Leu Leu Gly Ala Leu Pro  
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 Ser Ala Glu Ala Ala Arg Gly Pro Pro Arg Met Ala Asp Lys Val Val  
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 35 40 45  
 Val Glu Gly Asp Pro Pro Pro Leu Thr Met Trp Thr Lys Asp Gly Arg  
 50 55 60  
 Thr Ile His Ser Gly Trp Ser Arg Phe Arg Val Leu Pro Gln Gly Leu  
 65 70 75 80  
 Lys Val Lys Glu Val Glu Ala Glu Asp Ala Gly Val Tyr Val Cys Lys  
 85 90 95  
 Ala Thr Asn Gly Phe Gly Ser Leu Ser Val Asn Tyr Thr Leu Ile Ile  
 100 105 110  
 Met Asp Asp Ile Ser Pro Gly Lys Glu Ser Pro Gly Pro Gly Gly Ser  
 115 120 125  
 Ser Gly Gly Gln Glu Asp Pro Ala Ser Gln Gln Trp Ala Arg Pro Arg  
 130 135 140  
 Phe Thr Gln Pro Ser Lys Met Arg Arg Arg Val Ile Ala Arg Pro Val  
 145 150 155 160  
 Gly Ser Ser Val Arg Leu Lys Cys Val Ala Ser Gly His Pro Arg Pro  
 165 170 175  
 Asp Ile Met Trp Met Lys Asp Asp Gln Thr Leu Thr His Leu Glu Ala  
 180 185 190  
 Ser Glu His Arg Lys Lys Lys Trp Thr Leu Ser Leu Lys Asn Leu Lys  
 195 200 205  
 Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val Ser Asn Lys Ala Gly  
 210 215 220  
 Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile Gln Arg Thr Arg Ser  
 225 230 235 240  
 Lys Pro Val Leu Thr Gly Thr His Pro Val Asn Thr Thr Val Asp Phe  
 245 250 255  
 Gly Gly Thr Thr Ser Phe Gln Cys Lys Val Arg Ser Asp Val Lys Pro  
 260 265 270  
 Val Ile Gln Trp Leu Lys Arg Val Glu Tyr Gly Ser Glu Gly Arg His  
 275 280 285  
 Asn Ser Thr Ile Asp Val Gly Gly Gln Lys Phe Val Val Leu Pro Thr  
 290 295 300  
 Gly Asp Val Trp Ser Arg Pro Asp Gly Ser Tyr Leu Asn Lys Leu Leu  
 305 310 315 320  
 Ile Ser Arg Ala Arg Gln Asp Asp Ala Gly Met Tyr Ile Cys Leu Gly  
 325 330 335  
 Ala Asn Thr Met Gly Tyr Ser Phe Arg Ser Ala Phe Leu Thr Val Leu  
 340 345 350

Pro Asp Pro Lys Pro Pro Gly Pro Pro Met Ala Ser Ser Ser Ser Ser  
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 Thr Ser Leu Pro Trp  
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 35 40 45  
 Met Ala Pro Gln His Ile Leu Ala Ser Gly Ser Thr Ala Gly Pro Lys  
 50 55 60  
 Leu Tyr Pro Lys Leu Tyr Thr Asp Val His Thr His Thr His Thr His  
 65 70 75 80  
 Thr Cys Thr His Thr Leu Ser Cys Gly Gly Gln Gly Ser Ser Thr Pro  
 85 90 95  
 Ala Cys Pro Leu Ser Val Leu Asn Thr Ala Asn Leu Gln Ala Leu Cys  
 100 105 110  
 Pro Glu Val Gly Ile Trp Gly Pro Arg Gln Gln Val Gly Arg Ile Glu  
 115 120 125  
 Asn Asn Gly Gly Arg Val Ser  
 130 135